

AMENDMENTS TO THE CLAIMS

Upon entry of the present amendment, the status of the claims will be as is shown below. The claims in this listing will replace all prior versions, and listings, of claims in the application.

1-20. (Canceled)

21. (New) A circuit arrangement for electrically generating a ringing impedance in a telephone terminal, the circuit arrangement comprising:

at least one transistor, the ringing impedance being adaptable by controlling a resistance of a first transistor;

a first capacitor; and

a first input terminal and a second input terminal, the circuit arrangement having a ringing alternating voltage which can be tapped between the first input terminal and the second input terminal;

wherein a digital controller having a programmable digital filter sets the ringing impedance according to predetermined conditions by generating, from the ringing alternating voltage, a control voltage for controlling the first transistor, and

wherein a transmission function of the programmable digital filter can be set by programming filter coefficients.

22. (New) The circuit arrangement as claimed in claim 21,

wherein the programmable digital filter is a component of one of a programmable digital signal processor and a microprocessor.

23. (New) The circuit arrangement as claimed in claim 22,

wherein a digital power inverter circuit is connected upstream of the programmable digital filter and a digital rectifier circuit is connected downstream of the programmable digital filter.

24. (New) The circuit arrangement as claimed in claim 22,

wherein a second capacitor, a load path of a second transistor and a first resistor are arranged in series between the first input terminal and a reference potential;

wherein a third capacitor, a load path of a third transistor and a second resistor are arranged in series between the second input terminal and the reference potential,

wherein a first and a second input potential of the ringing alternating voltage are fed to the digital controller, and

wherein the digital controller provides a first control voltage for driving the second transistor and a second control voltage for driving the third transistor.

25. (New) The circuit arrangement as claimed in claim 21, further comprising:

a digital rectifier circuit for rectifying the ringing alternating voltage;

a second capacitor connected between an input terminal and the digital rectifier circuit; and

a second transistor having a load path arranged between outputs of the rectifier circuit;

wherein a first and second voltage, rectified from the ringing alternating voltage by the rectifier circuit, are fed to the digital controller, and

wherein the digital controller provides a control voltage for controlling the second transistor.

26. (New) The circuit arrangement as claimed in claim 25,

wherein at least one of the transistors is embodied as an n-channel-MOSFET.

27. (New) The circuit arrangement as claimed in claim 25, further comprising:
an analog/digital converter connected upstream of a digital power inverter circuit;
and

a digital/analog converter connected downstream of a digital rectifier circuit,
wherein the analog/digital converter, the digital/analog converter and an analog
integrator circuit are integrated on an analog semiconductor chip.

28. (New) The circuit arrangement as claimed in claim 21,
wherein the digital controller includes an analog integrator circuit connected
upstream of the first transistor, the analog integrator circuit outputting a signal which is
integrated from the difference between a first input voltage and a second input voltage,
the output signal driving the first transistor.

29. (New) The circuit arrangement as claimed in claim 28, further comprising:
an analog/digital converter connected upstream of a digital power inverter circuit;
and

a digital/analog converter connected downstream of a digital rectifier circuit,
wherein the analog/digital converter, the digital/analog converter and the analog
integrator circuit are integrated on an analog semiconductor chip.

30. (New) The circuit arrangement as claimed in claim 21,
further comprising a voltage divider that provides a component voltage from a
voltage at an output of a rectifier circuit.

31. (New) The circuit arrangement as claimed in claim 30, further comprising:

an analog/digital converter connected upstream of a digital power inverter circuit;
and

a digital/analog converter connected downstream of a digital rectifier circuit,
wherein the analog/digital converter, the digital/analog converter and an analog
integrator circuit are integrated on an analog semiconductor chip.

32. (New) A circuit arrangement for electrically generating a ringing
impedance in a telephone terminal, the circuit arrangement comprising:

at least one transistor, the ringing impedance being adaptable by controlling a
resistance of a first transistor;

a capacitor; and

a first input terminal and a second input terminal, the circuit arrangement having
a ringing alternating voltage which can be tapped between the first input terminal and
the second input terminal;

wherein a digital controller having a programmable digital filter sets the ringing
impedance according to predetermined conditions by generating, from the ringing
alternating voltage, a control voltage for controlling the first transistor;

wherein a transmission function of the programmable digital filter can be set by
programming filter coefficients, and

wherein a digital power inverter circuit is connected upstream of the
programmable digital filter and a digital rectifier circuit is connected downstream of the
programmable digital filter.

33. (New) The circuit arrangement as claimed in claim 32,

wherein the digital power inverter circuit, the programmable digital filter and a digital rectifier circuit are integrated on a digital semiconductor chip.

34. (New) The circuit arrangement as claimed in claim 33, further comprising:
an analog/digital converter connected upstream of the digital power inverter circuit; and

a digital/analog converter connected downstream of the digital rectifier circuit,
wherein the analog/digital converter, the digital/analog converter and an analog integrator circuit are integrated on an analog semiconductor chip.

35. (New) The circuit arrangement as claimed in claim 32, further comprising:
an analog/digital converter connected upstream of the digital power inverter circuit; and

a digital/analog converter connected downstream of the digital rectifier circuit;
wherein the analog/digital converter, the digital/analog converter and an analog integrator circuit are integrated on an analog semiconductor chip.

36. (New) A circuit arrangement for electrically generating a ringing impedance in a telephone terminal, the circuit arrangement comprising:

a plurality of transistors, the ringing impedance being adaptable by controlling a resistance of a first transistor;

a first capacitor; and

a first input terminal and a second input terminal, the circuit arrangement having a ringing alternating voltage which can be tapped between the first input terminal and the second input terminal;

wherein a digital controller having a programmable digital filter sets the ringing impedance according to predetermined conditions by generating, from the ringing alternating voltage, a control voltage for controlling the first transistor;

wherein a transmission function of the programmable digital filter can be set by programming filter coefficients;

wherein a second capacitor, a load path of a second transistor and a first resistor are arranged in series between the first input terminal and a reference potential,

wherein a third capacitor, a load path of a third transistor and a second resistor are arranged in series between the second input terminal and the reference potential,

wherein a first input potential and a second input potential of the ringing alternating voltage are fed to the digital controller, and

wherein the digital controller provides a first control voltage for driving the second transistor and a second control voltage for driving the third transistor.

37. (New) The circuit arrangement as claimed in claim 36,

wherein the digital controller has a first analog integrator circuit connected upstream of the second transistor, the first analog integrator circuit outputting a signal which drives the second transistor and which is integrated from the difference between a first input voltage and a second input voltage, and

wherein the digital controller has a second analog integrator circuit connected upstream of the third transistor, the second analog integrator circuit outputting a signal which drives the third transistor and which is integrated from the difference between a third input voltage and a fourth input voltage.

38. (New) The circuit arrangement as claimed in claim 37, further comprising:

at least one analog/digital converter connected upstream of the programmable digital filter; and

at least one digital/analog converter connected downstream of a digital rectifier circuit,

wherein the analog/digital converter, the digital/analog converter and the analog integrator circuits are integrated on an analog semiconductor chip.

39. (New) The circuit arrangement as claimed in claim 37, further comprising:
a first voltage divider for providing a first component voltage from the first input potential of the ringing alternating voltage, and

a second voltage divider for providing a second component voltage from the second input potential of the ringing alternating voltage.

40. (New) The circuit arrangement as claimed in claim 36, further comprising:
a first voltage divider for providing a first component voltage from the first input potential of the ringing alternating voltage, and

a second voltage divider for providing a second component voltage from the second input potential of the ringing alternating voltage.